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The annual listing of 10 companies that are at the forefront of providing Energy Storage Systems solutions and transforming businesses

AENTRON

ENABLING NEXT-GEN LITHIUM-ION BATTERY APPLICATIONS

Currently, the rising energy consumption and accelerating environmental impacts of fossil-fuel based sources are forcing all industry sectors to explore alternate avenues to generate and store energy. Among the various viable choices that include the use of renewables and more, the one that has been witnessing a recent surge, owing to recent technological advancements, is battery-based energy storage. Historically, lead-acid and lithium-ion batteries technologies were only used to power small-scale applications mainly due to their high initial cost. In the case of lithium-ion batteries, the obvious lack of standardised voltage configurations has hindered organisations in multiple industries from developing dedicated technology applications for their production lines or other operational requirements. Enabling such firms in the maritime, mobility, manufacturing, and other sectors with its unique ability to develop and offer lithium-ion batteries for a wide range of applications is Germany based aentron. "We develop industrial, standardised, scalable, and modular lithium-ion batteries to aid our clients in powering their specific technology in a safe and cost-effective manner," says Dr. John De Roche, founder, Director of Innovation and member of the board of aentron.

Discussing the core competencies of the company, Jan Brandt, CEO of aentron, says, "Our batteries are specifically designed for unique applications, and leverage standardised

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voltage configurations based on our client’s needs.” In addition, aentron uses standardised internal battery components, including battery management systems (BMS), cells, and more, to ensure that its solutions can go-to-market rapidly and cost-effectively. As a result, the company can develop its core solution rapidly before customising it to meet the energy requirements of a specific application. Brandt further mentions aentron’s emphasis on safety by pointing out the use of dedicated BMS software that is certified, highly scalable, and specially designed to assist clients in overcoming the traditional software integration complexities. aentron’s all-in-one BMS that is geared to satisfy a plethora of voltage needs and application requirements, thereby simplifying its incorporation into a client’s design. At the same time, to reduce the need for replacements in the long term, the company follows a sustainable approach with respect to its battery lifecycle. “At the end of their lifecycle, our batteries are reconditioned and put back into operation again where we reuse key components such as the cases, mount-elements, BMS and others after an internal quality-check,” adds Brandt. This allows the company in a novel way to reduce the total costs of ownership by reducing its batteries live-time for energy-intensive applications. Above all, the entirety of aentron’s portfolio is certified by the international maritime accredited registrar DNV GL.

With such unparalleled capabilities, aentron has ignited several client success stories since its inception in 2015. In one instance, the company assisted a manufacturing firm in overcoming their challenges in powering autonomous robots for their production line. Initially, the customer failed to develop a battery in-house due to the requirement of a 24/7 heavy-duty application storage capacity. Subsequently, the client found aentron, and with the unparalleled customisability and safety of the company's lithium-ion batteries, the client could finally focus on their robot development and complete the project. “In this collaboration, the client only had to make minor modifications to the software because our solution was compliant and certified to meet their needs,” states Dr. De Roche.

Similarly, aentron has assisted many organisations in tackling their energy needs with its unmatched portfolio and continuous drive toward innovation. Moving forward, Brandt plans to develop customisable battery solutions that can be remotely monitored and serviced to enter the fleet management arena and capitalise on the rising significance of IoT. “We recognise that if cell technology is going to move into the world of large scale applications, then companies are going to need a way to track the ageing and maintenance of thousands of battery units from a single screen,” mentions Brandt. Moreover, aentron is also poised to further reduce the costs of its solutions through its partnership with the European Union on the Horizon 2020 COBRA project and build safer batteries by working collaborations with leading academic institutes. EC